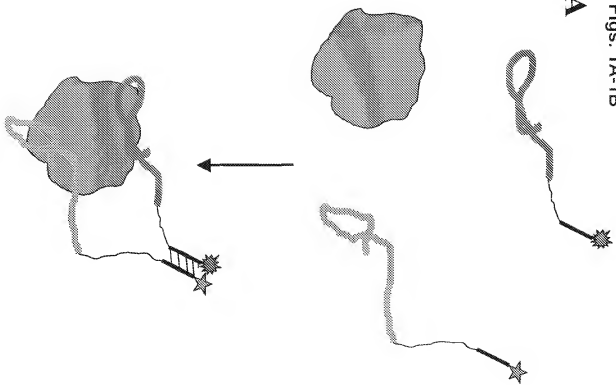
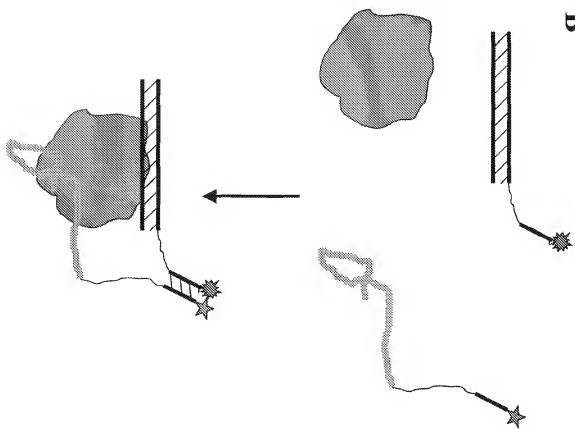


Figs. 1A-1B

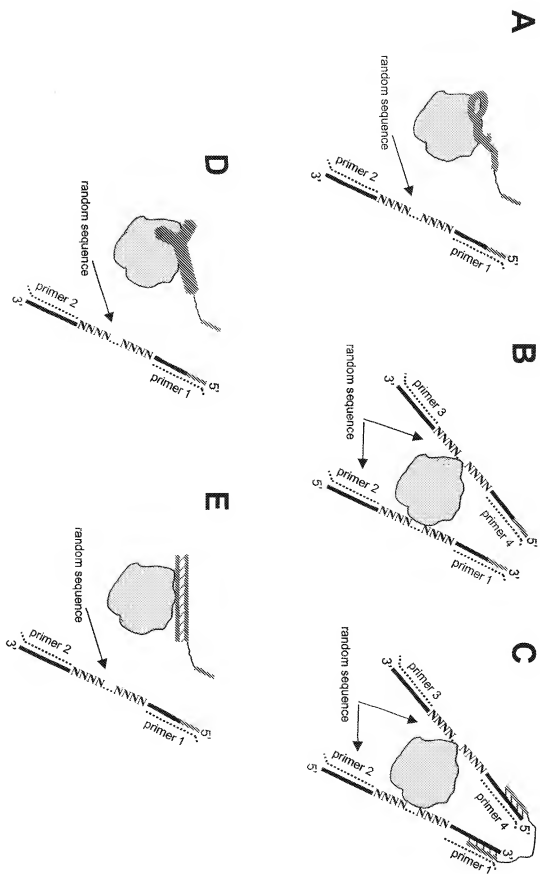
A



B

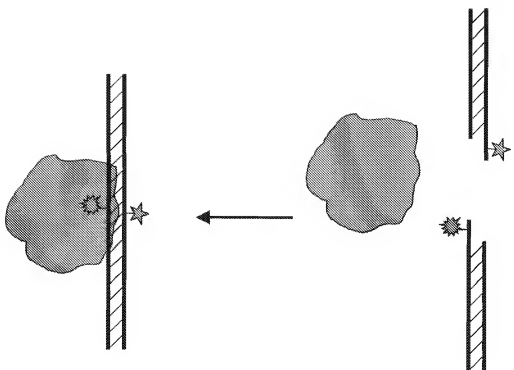


Figs. 2A-2E



Figs. 3A-3B

A



B

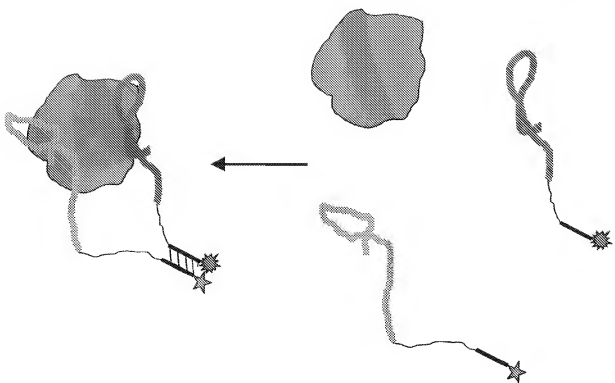
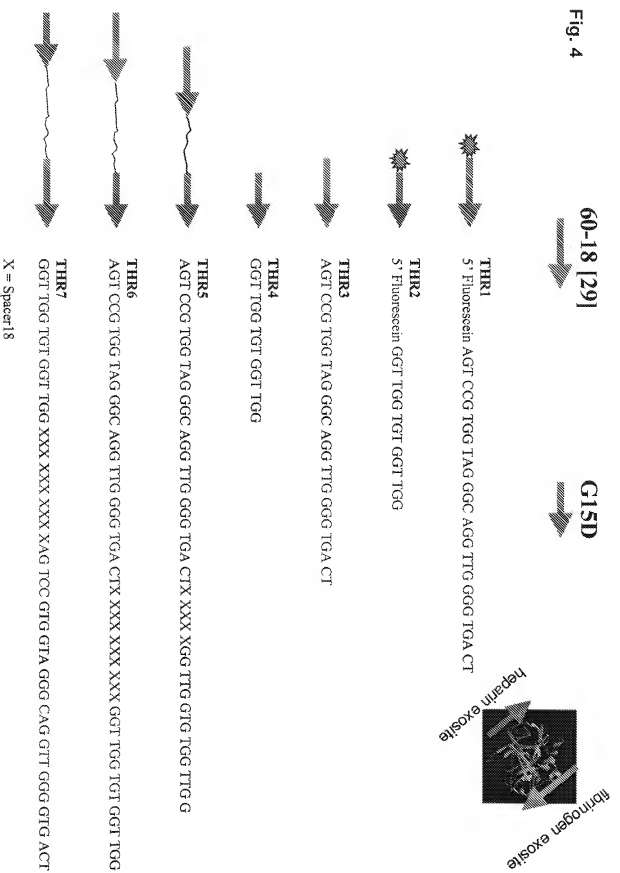
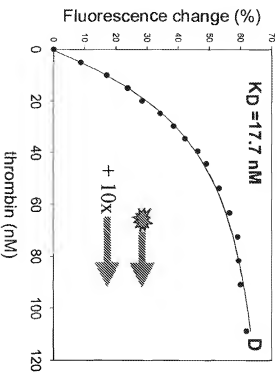
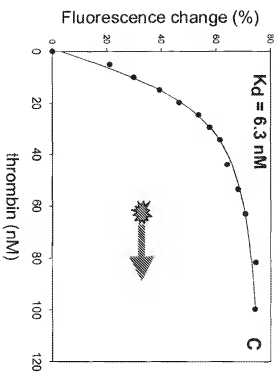
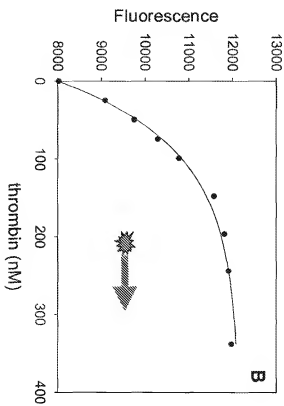
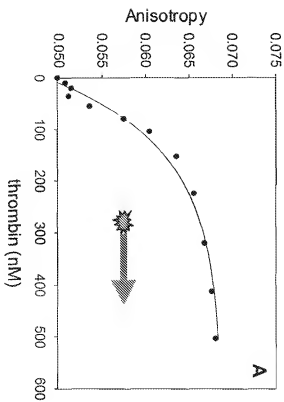


Fig. 4



Figs. 5A-5D



Figs. 6A-6D

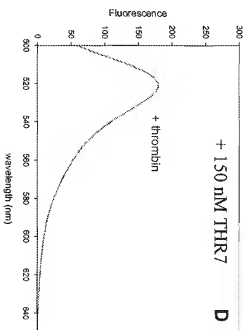
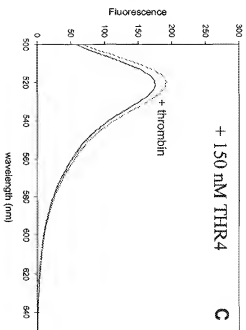
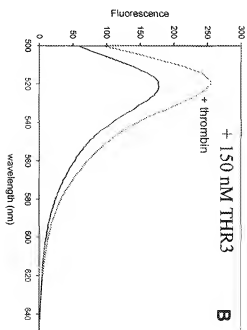
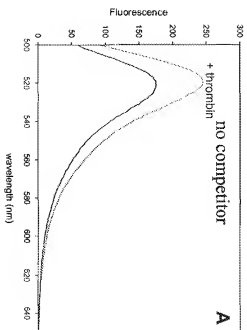
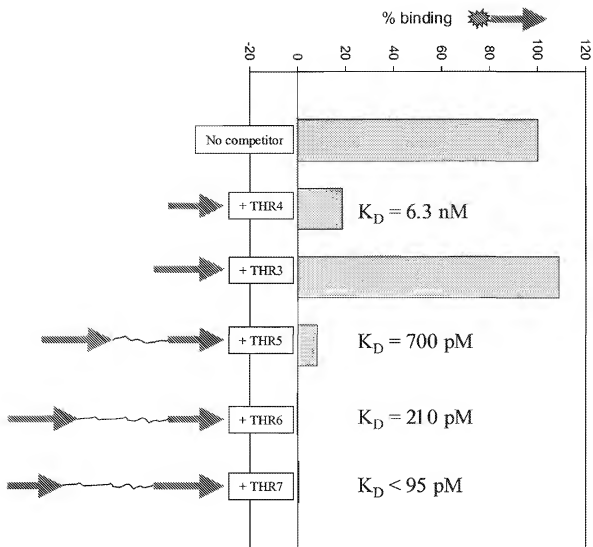
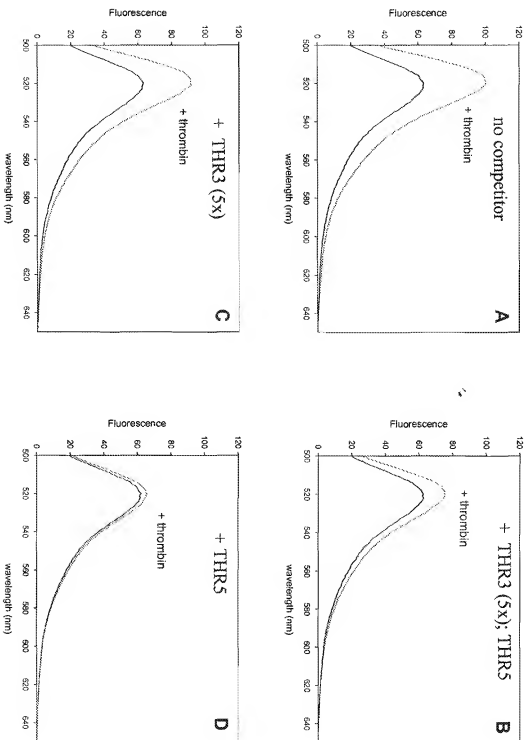


Fig. 7

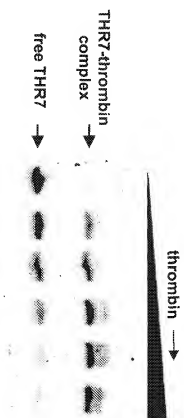


Figs. 8A-8D



Figs. 9A-9B

A



B

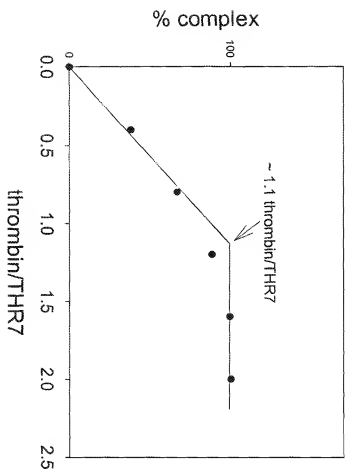
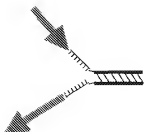


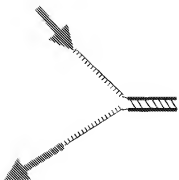
Fig.10

60-18 [29]

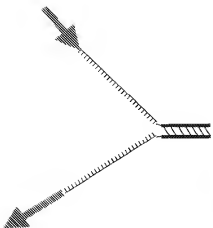
G15D



THR14
GGT TGG TGT GGT TGG TTT TTT T CTG TCG TTA GTG AAG GTT
THR15
AAC CTT CAC TAA CGA CAG TTT TTT T AGT CCG TCG TAG GGC
AGG TTG GGG TGA CT

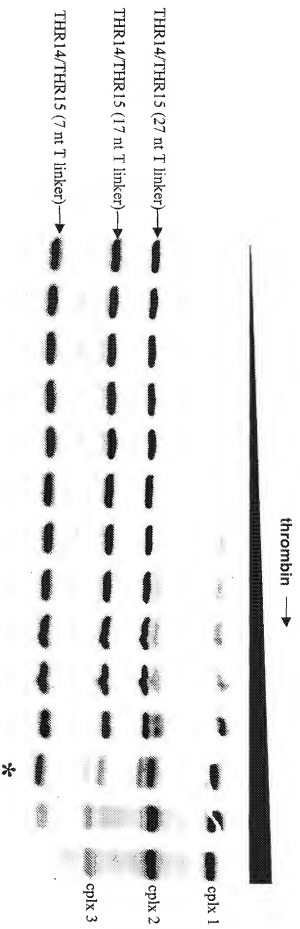


THR16
GGT TGG TGT GGT TGG TTT TTT TTT TTT TTT TT CTG TCG TTA GTG
AAG GTT
THR17
AAC CTT CAC TAA CGA CAG TTT TTT TTT TTT TTT TT AGT CCG TCG
TAG GGC AAG TTG GGG TGA CT

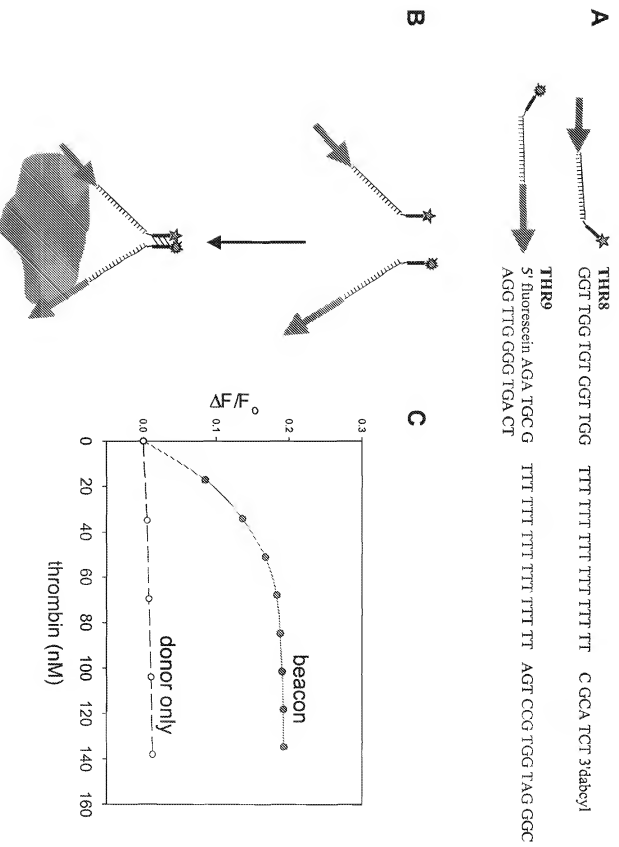


THR18
GGT TGG TGT GGT TGG TTT TTT TTT TTT TTT TTT TTT CTG TCG
TTA GTG AAG GTT
THR19
AAC CTT CAC TAA CGA CAG TTT TTT TTT TTT TTT TTT TTT TTT AGT
CCG TCG TAG GGC AAG TTG GGG TGA CT

Fig. 11



Figs. 12A-12C



Figs. 13A-13C

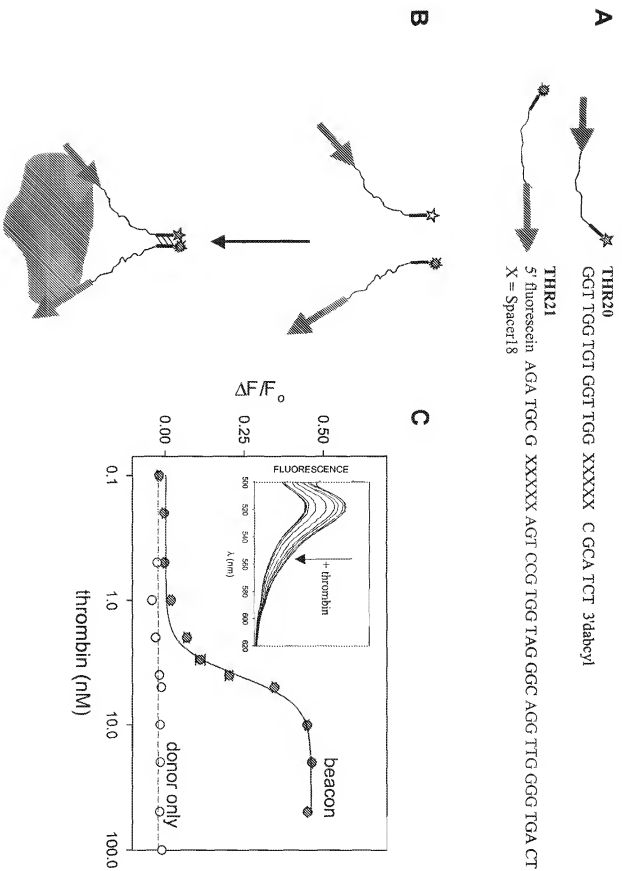
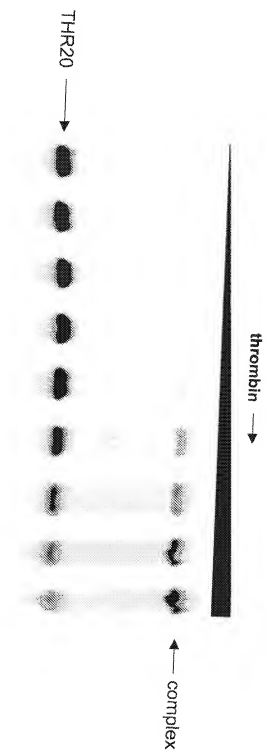


Fig. 14



Figs. 15A-15B

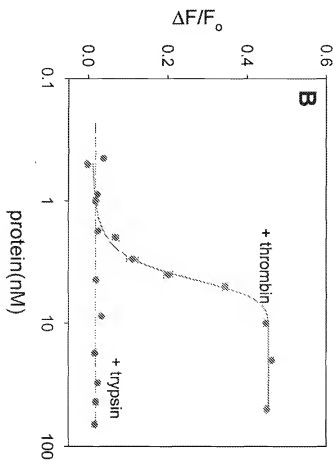
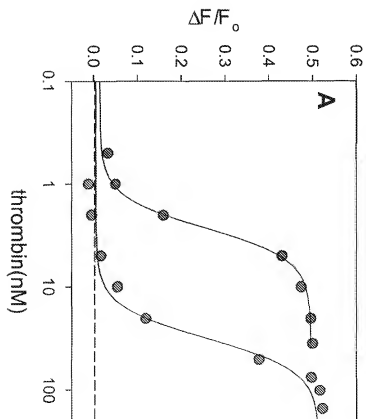
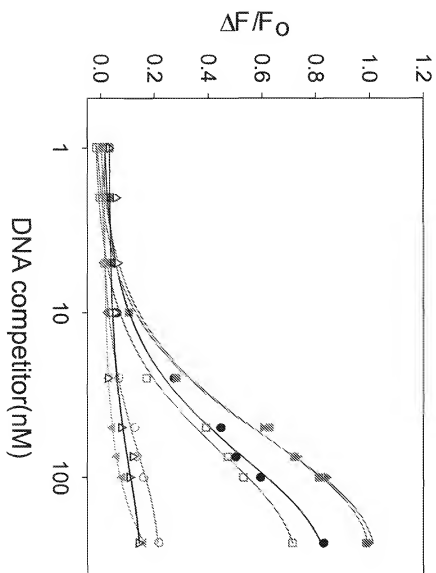
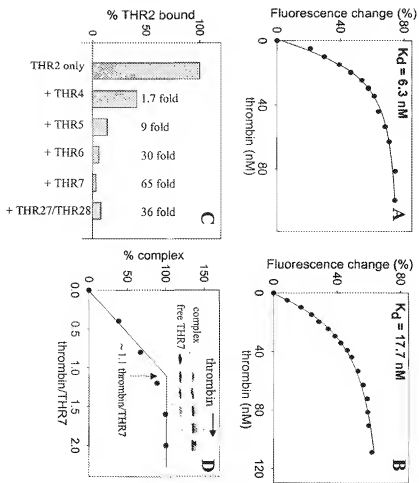


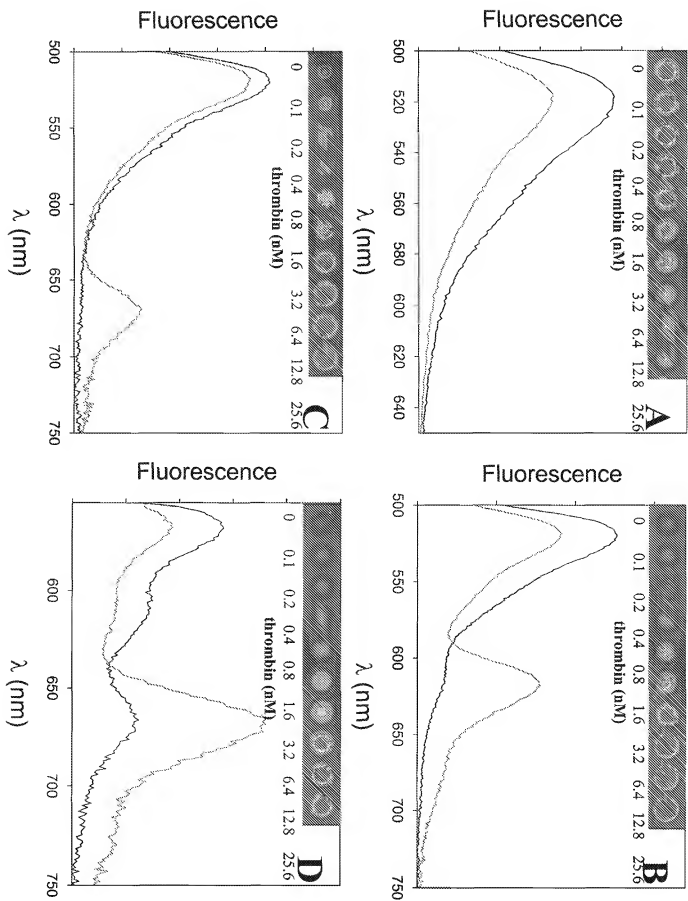
Fig. 16



Figs. 17A-17D



Figs. 18A-18D



Figs. 19A-19F

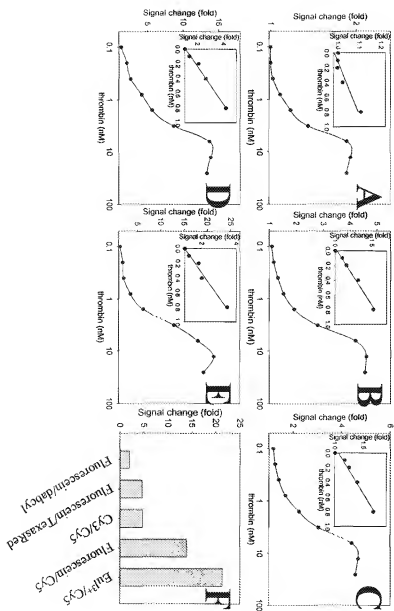
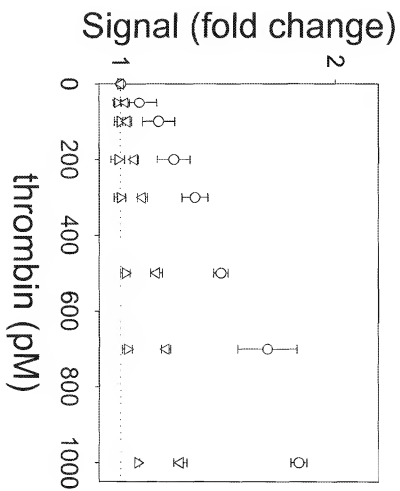


Fig. 20



Figs. 21A-21B

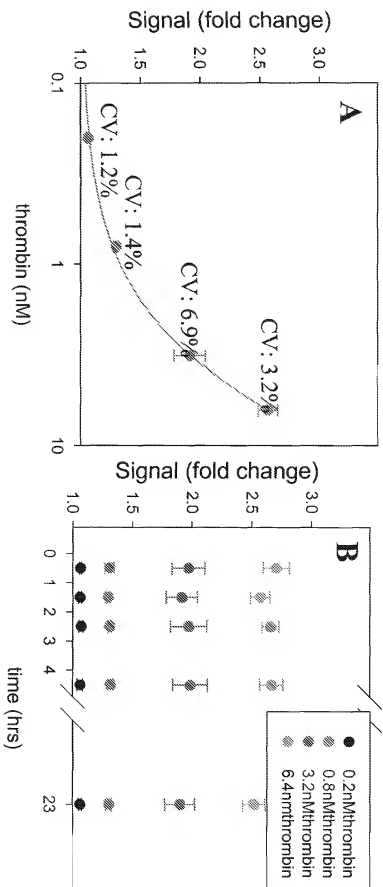
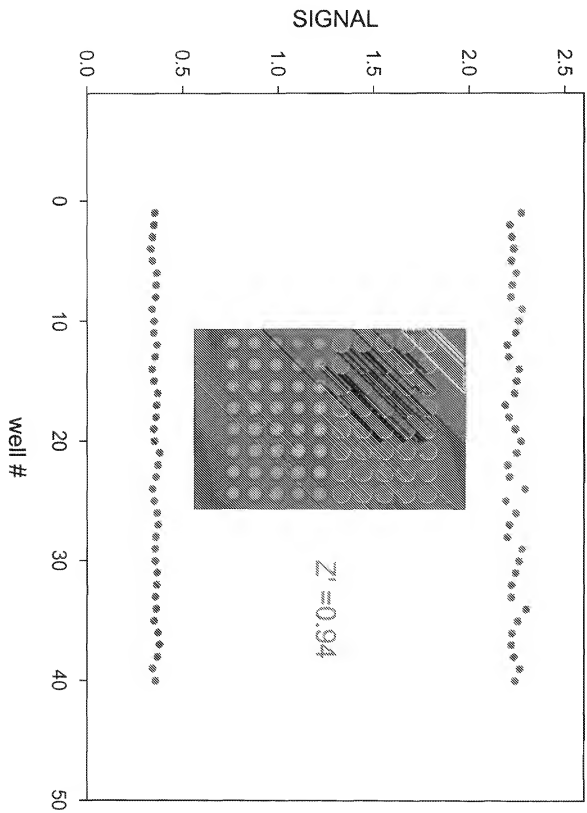
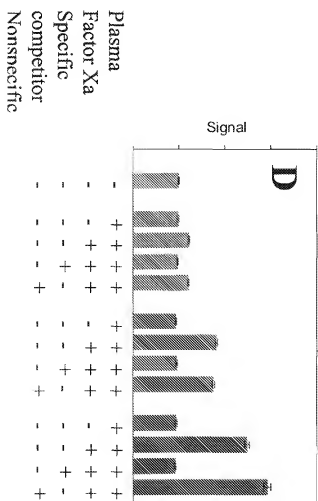
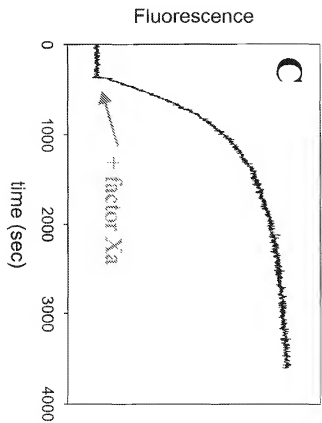
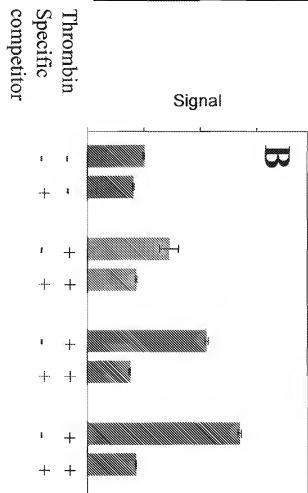
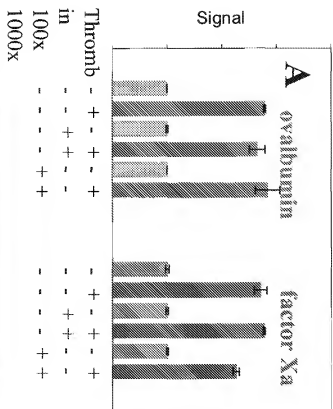
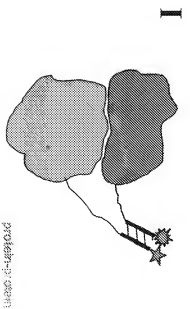
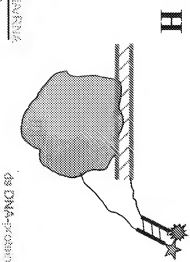
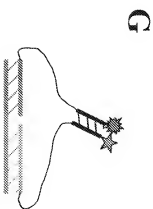
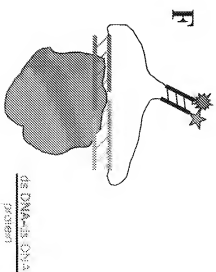
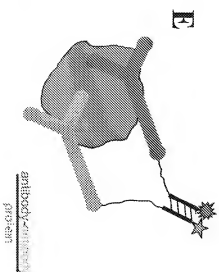
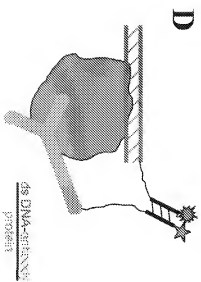
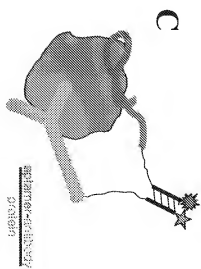
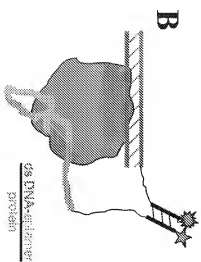
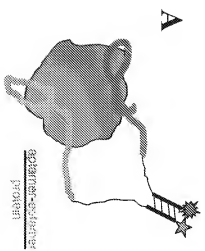


Fig. 22



Figs. 23A-23D

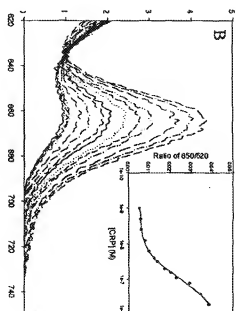
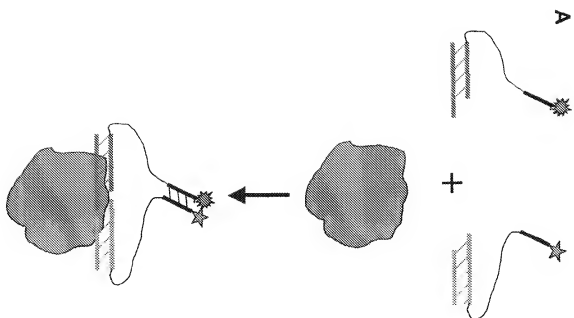




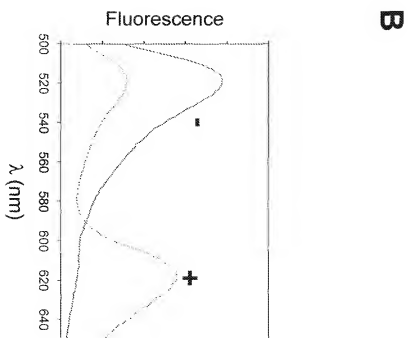
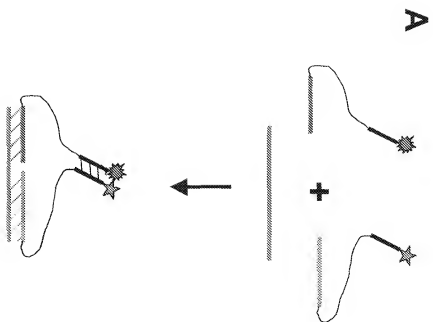
Figs. 24A-24I

ss DNA-protein
ds DNA-protein

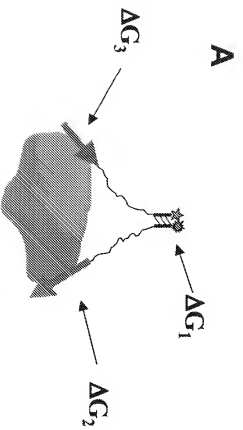
Figs. 25A-25B



Figs. 26A-26B



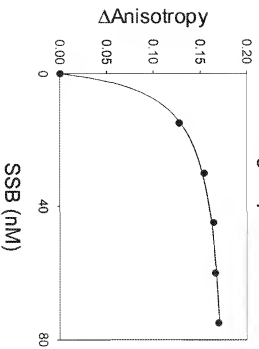
Figs. 27A-27C



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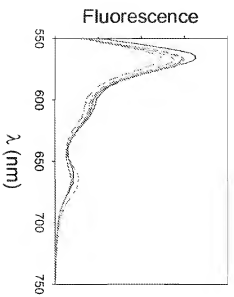
B

Nonspecific binding to single aptamer



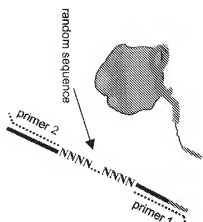
C

No signal with the beacon



Figs. 28A-28C

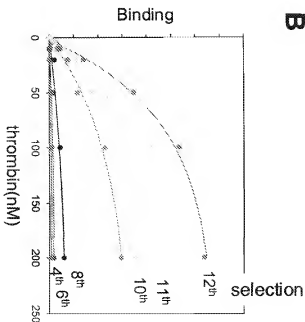
A



C

clone1 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone2 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone3 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone4 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone5 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone6 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone7 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone8 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone9 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone10 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone11 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone12 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone13 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone14 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone15 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone16 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone17 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone18 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone19 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone20 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone21 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone22 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone23 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone24 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone25 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone26 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone27 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone28 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone29 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone30 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone31 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone32 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
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clone35 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone36 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone37 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone38 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone39 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone40 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone41 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone42 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone43 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone44 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone45 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone46 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone47 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone48 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone49 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone50 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone51 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone52 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone53 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone54 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone55 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone56 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone57 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone58 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone59 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone60 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone61 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone62 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone63 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone64 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone65 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone66 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone67 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone68 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone69 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone70 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone71 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone72 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone73 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone74 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone75 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone76 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone77 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone78 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone79 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone80 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone81 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone82 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone83 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone84 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone85 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone86 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone87 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone88 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone89 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
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clone91 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone92 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
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clone94 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone95 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone96 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone97 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone98 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone99 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33
clone100 - GCGCGG AAGCGATGCGGATGAG AAGGCGG 33

B



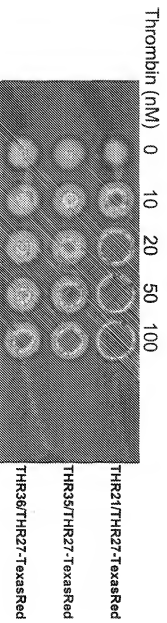
selection

Figs. 29A-29B

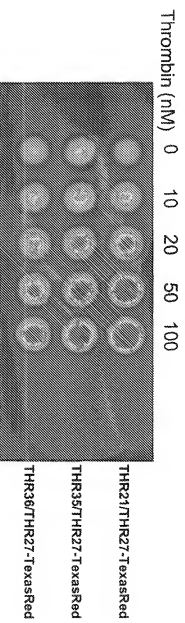
clones 20,21,24,26

5'fluoresceinAGATGGGXXXXAGGTTGGGCGTACTACGTATCAATGGGTATGGGTGGTGTACGC
 5'fluoresceinAGATGGGXXXXAGGTTGGGCGTACTACGTATCAATGGGTATGGGTGGTGTACGCCATAT

A

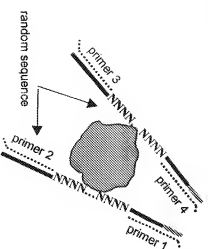


B

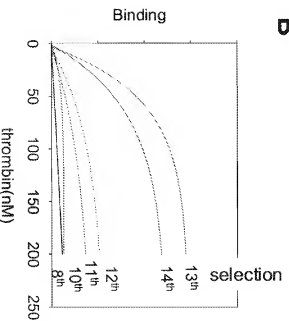


Figs. 30A-30C

A



B



C

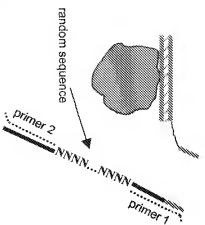
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clone1-1  --GGTACGGTGGTTCATATGAGG--ATTGCAT----- 30
clone1-2  --GGTTAGCGTGGTTCATATGAGG--ATTGCAT----- 30
clone1-4  --GGTTAGCGTGGTTCATATGAGG--ATTGCAT----- 30
clone1-5  --GGTTAGCGTGGTTCATATGAGG--ATTGCAT----- 30
clone1-9  --GGTTAGCGTGGTTCATATGAGG--ATTGCAT----- 30
clone2-4  --GGTTAGCGTGGTTCATATGAGG--ATTGCAT----- 30
clone2-7  --GGTTAGCGTGGTTCATATGAGG--ATTGCAT----- 30
clone2-10 --GGTTAGCGTGGTTCATATGAGG--ATTGCAT----- 30
clone2-8  --GGTTAGCGTGGTTCATATGAGG--ATTGCAT----- 30
clone2-9  --GGTTAGCGTGGTTCATATGAGG--ATTGCAT----- 30
clone2-12 --GGTTAGCGTGGTTCATATGAGG--ATTGCAT----- 30
clone2-14 --GGTTAGCGTGGTTCATATGAGG--ATTGCAT----- 30
clone1-8  --GGTTAGCGTGGTTCATATGAGG--ATTGCAT----- 30
clone2-2  --GGTTAGCGTGGTTCATATGAGG--ATTGCAT----- 30
clone1-7  --GGTTAGCGTGGTTCATATGAGG--ATTGCAT----- 30
clone2-5  --GGTTAGCGTGGTTCATATGAGG--ATTGCAT----- 30
clone2-13 --GGTTAGCGTGGTTCATATGAGG--ATTGCAT----- 30
clone2-3  --GGTTAGCGTGGTTCATATGAGG--ATTGCAT----- 30
clone2-11 --GGTTAGCGTGGTTCATATGAGG--ATTGCAT----- 30
clone2-1  --GGTTAGCGTGGTTCATATGAGG--ATTGCAT----- 30
clone1-10 --GGTTAGCGTGGTTCATATGAGG--ATTGCAT----- 30
clone1-6  --GGTTAGCGTGGTTCATATGAGG--ATTGCAT----- 30
clone1-3  --GGTTAGCGTGGTTCATATGAGG--ATTGCAT----- 30
clone2-6  --GGTTAGCGTGGTTCATATGAGG--ATTGCAT----- 30
ruler 1.....10.....20.....30.....40

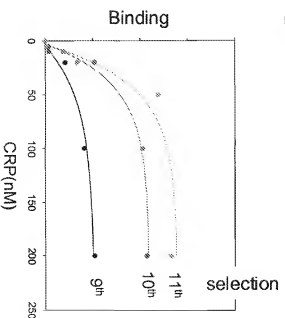
```

Figs. 31A-31C

A



B



C

```

clone1  ATGAGAGGCGCTGTGTAAGCGGTTGCTGCTGAG-----33
clone2  -----GAGAGAGAGGCGAGCGAGCTGAGTGGCGAGAG-----33
clone3  -----AAGAGGCGAGCGAGCTGAGTGGCGAGAG-----33
clone15 -----AAGAGCGAGCGAGCTGAGTGGCGAGAG-----33
clone15 -----CAGGAGCGAGCGAGCTGAGTGGCGAGAG-----33
clone20 -----AAGAGAGCGAGCGAGCTGAGTGGCGAGAG-----33
clone10 -----CGAGAGAGCGAGCGAGCTGAGTGGCGAGAG-----33
clone10 -----ACAGAGAGCGAGCGAGCTGAGTGGCGAGAG-----33
clone13 -----AAGAGAGCGAGCGAGCTGAGTGGCGAGAG-----33
clone2  -----CGAGAGAGCGAGCGAGCTGAGTGGCGAGAG-----33
clone6  -----CGAGAGAGCGAGCGAGCTGAGTGGCGAGAG-----33
clone9  -----CGAGAGAGCGAGCGAGCTGAGTGGCGAGAG-----33
clone16 -----CGAGAGAGCGAGCGAGCTGAGTGGCGAGAG-----33
clone21 -----CGAGAGAGCGAGCGAGCTGAGTGGCGAGAG-----33
clone4  -----CGAGAGAGCGAGCGAGCTGAGTGGCGAGAG-----33
clone22 -----AAGAGAGCGAGCGAGCTGAGTGGCGAGAG-----33
clone14 -----CGAGAGAGCGAGCGAGCTGAGTGGCGAGAG-----33
clone18 -----CGAGAGAGCGAGCGAGCTGAGTGGCGAGAG-----33
clone18 -----CGAGAGAGCGAGCGAGCTGAGTGGCGAGAG-----33
clone11 -----CGAGAGAGCGAGCGAGCTGAGTGGCGAGAG-----33
clone11 -----CGAGAGAGCGAGCGAGCTGAGTGGCGAGAG-----33
ruler  1.....10.....20.....30.....40.....50...

```

Figs. 32A-32B

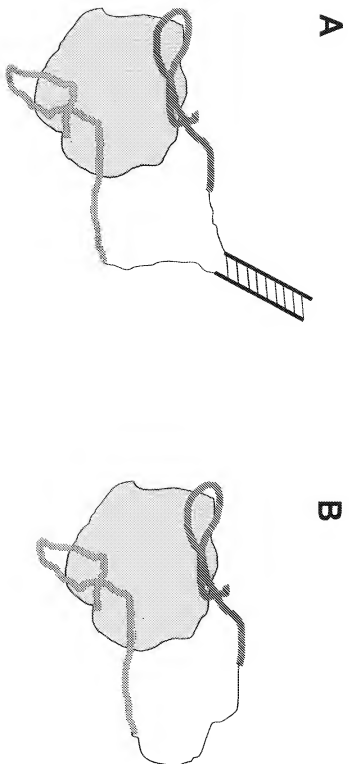


Fig 33

